

I claim:

1. A coating composition comprising:

- (a) at least one autoxidizable alkoxysilane; and  
(b) at least one binder polymer.

2. The coating composition of claim 1,  
wherein said binder polymer is an aqueous emulsion polymer.

3. The coating composition of claim 1,  
wherein said coating composition comprises 0.01 to 25% by weight of said  
autoxidizable alkoxysilane, based on the dry weight of said binder  
polymer.

4. The coating composition of claim 1,  
wherein said autoxidizable alkoxysilane has the formula  
 $\text{Si}(\text{R}_1)_a(\text{R}_2)_b(\text{OR}_3)_{4-a-b}$ ,  
wherein

- (a)  $\text{R}_1$  is an organic residue containing at least one  
-CH=CHCH<sub>2</sub>CH=CH- or -CH=CH-CH=CH- group and  
is bound to the silicon via a carbon atom;  
(b)  $\text{R}_2$  is an organic residue bound to the Si via  
a C atom;  
(c)  $\text{R}_3$  is an organic residue;  
(d) "a" is an integer from 1 to 3;  
(e) "b" is an integer from 0 to 2; and  
(f) the sum of "a" and "b" is an integer from 1 to 3.

5. The coating composition of claim 1,  
wherein said autoxidizable alkoxysilane has the formula  
 $\text{Si}(\text{R}_1)_a(\text{R}_2)_b(\text{OR}_3)_{4-a-b}$ ,  
wherein:

- (a)  $\text{R}_1$  is an organic residue containing at least one  
dicyclopentenyl group and is bound to the silicon via a carbon  
atom;

(b)  $R_2$  is an organic residue bound to the silicon via a carbon atom;

(c)  $R_3$  is an organic residue;

(d) "a" is an integer from 1 to 3;

5 (e) "b" is an integer from 0 to 2; and

(f) the sum of "a" and "b" is an integer from 1 to 3.

6. The coating composition of claim 1,  
wherein said binder polymer contains at least one functional group that is  
autoxidizable or reactive with compounds formed during the  
10 oxidation of said autoxidizable alkoxysilane.

7. The coating composition of claim 6,  
wherein said functional group is a 1,3-dicarbonyl group.

8. The coating composition of claim 7,  
wherein said 1,3-dicarbonyl functionality is derived from the residue of  
15 acetoacetoxyethyl methacrylate.

9. A method for producing a coating on a substrate surface comprising:  
(i) applying to said substrate surface a layer of a coating composition  
comprising:  
(a) at least one autoxidizable alkoxysilane; and  
20 (b) at least one binder polymer; and  
(ii) drying said coating composition.

10. The method of claim 9,  
wherein said binder polymer is an aqueous emulsion polymer.

11. The method of claim 9,  
25 wherein said coating composition comprises 0.01 to 25% by weight of said  
autoxidizable alkoxysilane, based on the dry weight of said binder  
polymer.

12. The method of claim 9,  
wherein said autoxidizable alkoxysilane has the formula  
30  $\text{Si}(\text{R}_1)_a(\text{R}_2)_b(\text{OR}_3)_{4-a-b}$ ,  
wherein

(a)  $\text{R}_1$  is an organic residue containing at least one

-CH=CHCH<sub>2</sub>CH=CH- or -CH=CH-CH=CH- group and is bound to the silicon via a carbon atom;

(b) R<sub>2</sub> is an organic residue bound to the Si via a C atom;

(c) R<sub>3</sub> is an organic residue;

(d) "a" is an integer from 1 to 3;

(e) "b" is an integer from 0 to 2; and

(f) the sum of "a" and "b" is an integer from 1 to 3.

13. The method of claim 9,

wherein said autoxidizable alkoxysilane has the formula  
Si(R<sub>1</sub>)<sub>a</sub>(R<sub>2</sub>)<sub>b</sub>(OR<sub>3</sub>)<sub>4-a-b</sub>,

wherein

(a) R<sub>1</sub> is an organic residue containing at least one dicyclopentenyl group and is bound to the silicon via a carbon atom;

(b) R<sub>2</sub> is an organic residue bound to the silicon via a carbon atom;

(c) R<sub>3</sub> is an organic residue;

(d) "a" is an integer from 1 to 3;

(e) "b" is an integer from 0 to 2; and

(f) the sum of "a" and "b" is an integer from 1 to 3.

14. The method of claim 9,

wherein said binder polymer contains at least one functional group that is autoxidizable or reactive with compounds formed during the oxidation of said autoxidizable alkoxysilane.

15. The method of claim 9,

wherein said functional group is a 1,3-dicarbonyl group.

16. The method of claim 15,

wherein said 1,3-dicarbonyl functionality is derived from the residue of acetoacetoxyethyl methacrylate.

17. An autoxidizable silane having the formula Si(R<sub>1</sub>)<sub>a</sub>(R<sub>2</sub>)<sub>b</sub>(OR<sub>3</sub>)<sub>4-a-b</sub>,  
wherein

- (a)  $R_1$  is an organic residue containing at least one autoxidizable group and is bound to the silicon via a carbon atom;
- (b)  $R_2$  is an organic residue bound to the Si via a C atom;
- (c)  $R_3$  is an organic residue;
- (d) "a" is an integer from 1 to 3;
- (e) "b" is an integer from 0 to 2; and
- (f) the sum of "a" and "b" is an integer from 1 to 3.

- 10 18. The composition of claim 17,  
wherein said autoxidizable group is  $-\text{CH}=\text{CHCH}_2\text{CH}=\text{CH}-$  or  $-\text{CH}=\text{CH}-\text{CH}=\text{CH}-$ .
19. The composition of claim 17,  
wherein said autoxidizable group is cyclopentenyl.